

METEOROLOGY FOR NOVEMBER, 1866.

PRIVATE OBSERVATORY, HOBART TOWN.

Day of month.	Bar. 37 feet abv. sea level, cor. & reduced		Self - register- ing Thermo- meters.				Wind.		Rain in inches.
	Highest.	Lowest.	Highest in shade.	Lowest in shade.	Highest in sun.	Lowest on grass	Direction from three daily registers.	Force in lbs. per square foot.	
	In.	In.	°	°	°	°			
1	29.433	29.290	62	50	99.0	49.0	NW W	5.46	0.08
2	29.583	29.394	62	47	90.5	45.0	N NW SW	5.72	0.21
3	30.074	30.003	60	42	100.0	39.0	NW NE SE	1.30	0.02
4	29.980	29.691	71	41	121.0	37.5	NW	6.25	
5	30.139	30.064	75	50	113.0	47.0	NW NE SE	1.76	
6	29.992	29.622	80	44	117.5	44.0	NW N	3.12	
7	29.924	29.818	77	52	107.0	50.5	NE SE SW	.52	0.06
8	30.084	30.057	59	38	95.0	35.5	NW SE N	.78	
9	29.975	29.846	62	46	85.5	41.0	NW SESW	.78	0.11
10	29.837	29.754	55	47	61.0	50.0	NW SSW	3.12	0.31
11	29.837	29.776	63	49	86.0	49.5	SE	1.56	0.45
12	29.563	29.359	64	45	110.0	47.0	NENW SE	1.30	0.19
13	29.778	29.556	56	43	62.0	42.0	S SW	8.31	1.68
14	30.001	29.930	56	44	107.0	41.5	SW SE	5.72	0.14
15	30.062	30.032	59	46	95.0	43.0	S SE	1.56	0.03
16	29.892	29.741	67	47	115.0	47.5	NW ES	1.30	0.15
17	29.665	29.630	56	45	99.0	47.0	SW W	3.12	0.04
18	29.892	29.868	65	47	109.0	45.0	SW SE	3.38	0.05
19	29.968	29.961	65	47	113.5	44.5	NW SE	1.30	
20	29.916	29.829	72	47	118.0	45.0	NW	1.30	
21	30.028	30.020	67	47	110.5	44.0	NE SESW	1.04	
22	29.769	29.259	67	51	73.0	50.0	NW NE N	1.04	
23	29.815	29.595	67	51	110.0	49.0	NW W	1.04	
24	30.051	30.040	69	43	110.0	41.0	NW SE	1.76	0.02
25	30.052	29.846	70	50	106.5	48.0	N S	1.30	
26	29.718	29.625	66	48	108.0	45.0	NW W SW	3.64	
27	29.795	29.754	62	43	108.0	41.0	SW NE W	1.30	
28	29.748	29.597	61	44	103.5	40.5	N NE SE	.78	
29	29.456	29.291	66	46	97.5	43.0	NENWSW	3.38	
30	29.810	29.755	66	44	106.0	45.5	NW	3.12	
Monthly									
mean 29.794 56 .46 101.23 44.53. Total force 75.68 3.54									

The mean in all cases is taken from the sums of the three daily registers, and not from the maximum and minimum.

The direction of the wind is registered from currents moving at a height of 192 feet, and the force according to Lind's Wind Gauge. The supposition, however, of an uniform velocity during the month is a very arbitrary one, and the results can be considered only approximately correct.

The relations of the quantities of rain which fell under the different winds are registered each evening at sundown.

The twenty-five years' standard tables are used for obtaining the difference from the average.

*Leafing, Flowering, and Fruiting of a Few Standard Plants
in the Royal Society's Gardens during the Month :—*

- 14th. First ripe Cherry gathered.
 20th. First ripe Strawberry ditto.
 24th. Black Mulberry in full blossom.
 27th. Pomegranate commencing to flower.
 27th. Bougainvillæa spectabilis in full bloom.

Barometer mean, 29 794in., being 0·073in. above the average.

Temperature mean, 56·46°, being 1·08° below the ditto.

Solar intensity mean, 101 23°, being 0·58° below the ditto.

Dew point mean, 46·3°, being 0·44° below the ditto.

Humidity of air mean, '71, the same as standard for 25 years.

Elastic force of vapor mean, '321, being '004 per cent. below the ditto.

Total amount of rain, 3·54in., being 0·70in. above the ditto.

Increase of spontaneous evaporation on rainfall, 0·17in.

Mean amount of ozone, 7·92, being 0·36 of chromatic scale above the ditto.

Electricity active on the 4th, 5th, 6th, 24th 27th, and 30th.

A thunder storm on the 16th. Snow on Mt. Wellington during the months except from the 3rd to the 11th.

FRANCIS ABBOTT.

ANALYSIS OF THE OBSERVATORY RECORDS FOR NOVEMBER, 1866, IN CONJUNCTION WITH THOSE OF BIRTHS, DEATHS, &c. BY E. SWARBRECK HALL.

Though the Meteorological phenomena this month, were in many respects abnormal, the deaths were nevertheless below the average of the previous nine years' Novembers. The air was pure and the rainfall large, so that in the Zymotic class of diseases there was not a single death recorded. On the other hand, atmospheric pressure underwent frequent and extensive daily perturbations; temperature, also, was considerably below the average, with wide daily ranges. The diseases, therefore, most influenced by the latter phenomena, were more fatal proportionately to the whole mortality than usual.

Atmospheric pressure mean, 29·794, differed very little from the 20 years' adopted standard mean, being only +·069 higher. The maximum, 30·139, occurred on the 5th. No year since 1854 had so low a maximum. The minimum, 29·259, was noted on the 22nd, and was in no way remarkable. The month's range ·880, in 17 days was smaller than has been recorded since 1854. Nevertheless, the daily perturbations were more than usually great, the highest being a rise of +·680 of an inch on the 3rd. The next in amount was a fall of—·588 on the 22nd. Altogether, there were 15 days on which the movements of the barometer exceeded one fifth of an inch. These facts show how much an enquirer might be led astray in weighing the influence of atmospheric pressure on health and life, by depending on monthly averages, instead of scrutinising the daily variations. Persons suffering under hopeless diseases of long standing succumbed in great numbers to the rapid and extensive mutations of atmospheric pressure and temperature, as the analysis of the mortuary records from cancer, consumption, heart, and other chronic diseases will hereafter show.

Wind-force had a total of 75·68 lbs., which is—36·65 lbs. less than the November average of the previous nine years, and—61·22 lbs. less than 1865 had. Nevertheless, when the frequency and force of the winds from the different points of the compass are examined in reference to their salubrity, it is evident that the present month, with a force so much below what is usual, on the whole had a preponderance from those quarters from which the purest (most highly ozonised) winds blow. *South-east, south, south-west, west*, were noted 44 out of the 90 observations, but with 43·95 lbs. of the 75·68 lbs. total force, or considerably more than one half. Last year the three first of these winds had not so much force as in the present year, by 14·81 lbs. The greatest force noted was, 5·21 lbs. pressure to the square foot, recorded twice, one being a *south*, and the other a *north-west* wind. Only 6 *calms* were registered being—3·67 less than the nine years' average, and two less than 1865 had. Constant but moderate winds, principally from the healthiest quarters, characterised the present month, and had a neutralising effect on other less propitious meteorological phenomena.

Temperature mean, 56·46 degrees, is—1·33 below the 20 years' mean, and—2·77 less than 1865 had. November 1863 was nearly a degree colder, but no other November since 1854 was nearly so cold as the present year's. The mean of the self-registering maxima and minima thermometers, was again lower than the observed ones, being only 55·32 degrees. The maximum was 80 degrees, noted on the 6th. Last year the maximum was 95 degrees. Only four times in the previous 25 years, were there lower maxima than the present month had. The mean of all the

maxima, or high-day temperature records, was 64.50 degrees, being —6 degrees below that in November 1865. The minimum temperature recorded was 38 degrees, which is one degree less than 1865 had, and from 3 to 8 less than any year since 1854. The mean of all the minima or low-night temperature records, was 46.13 degrees, being —2.64 less than 1865 had.

The mean *Daily-range of Temperature*, 18.97 degrees, is +.13 above the 20 years' mean, though —3.74 degrees less than 1865 had. The greatest range on any day was 36 degrees on the 4th and 6th; and the smallest range on any day was 8 degrees on the 10th. Only 1865, 1864, 1846, 1843 had a greater range on any day in the month, than that of the present month.

Solar-intensity mean, 101.23 is, —.58 less than the average of the previous ten years, and —6.50 below last year's mean, the present month having been much more cloudy. The maximum was 121 on the 4th, the minimum 61 on the 10th. Last year the extremes were 129 and 71 degrees.

Terrestrial-radiation had the mean of, 44.58 degrees, being —1.91 degrees less than the average of the previous ten years, and —1.90 below the mean of November 1865. The extremes were:—Maximum, 50.5, on the 7th; minimum 35.5 on the 8th. Last year the corresponding records were respectively, 51 and 39 degrees.

Rain-fall in the aggregate amounted to 3.54 inches, being +.78 of an inch above the 20 years average for November, and +1.51 more than 1865 had. On the average of the last 25 years November is much the wettest month of the twelve. Eight out of the 25 years, however, had heavier rain-falls than the present month. Four of them were consecutive:—1848, 1849, 1850, 1851. In 1849 the maximum of the 25 years, 8.94 inches, was recorded. Rain fell on one half of the days of the month, being +2.18 more than the average of the previous eleven years, and +3.00 more than 1865 had. On the ten days, 9th to 18th, rain fell every day, and very heavily on the 10th, 11th, 12th, 13th, their total being 2.73 inches and causing a partial flood. This thorough cleanings of the rivulet and the other sewer channels of the city, was an admirable preparatory preservative for the health of the community during the warm months of summer. *Snow* was seen on Mount Wellington every day of the month, except from 3rd to 12th, on the latter day the mountain was copiously mantled with a fresh deposit and a patch of it remained unmelted on the last day of the month.

Spontaneous Evaporation only slightly exceeded precipitation, being 3.71 inches. 1865 had 5.46 inches.

Humidity mean, 71, was +5 more than last year, but exactly the same as the mean of the 20 years' standard.

Elastic-force of Vapor had the mean of 321, which is —6 less than the 20 years' average, and —11 less than 1865 had.

Cloud mean, 6.68, was +.59 more than the 20 years' mean and +1.09 above the 1865 mean.

Ozone mean, 7.92, was +.36 above the mean of the previous 9 years, though —.54 less than 1865 had. No doubt the greater aerial movement in 1865 accounts for the preponderance. The point of saturation (10) was recorded three times in the present month, and the minimum noted was 6.5. So much ozone, low and variable temperature, and keen southerly winds, caused inflammatory affections of the respiratory organs—and the deaths in this class of diseases were above the average. On the other hand, the same weather was quite antagonistic to the diseases of the miasmatic order in the Zymotic class.

Electricity records were:—25 positive with tension ranging from 7 to 2.5; Negative 34, with 7.5 to 1.0 tension. Only one Nil. *Thunder and lightning* accompanied a rain storm on the afternoon of the 16th.

The *Deaths*, 36, for November 1866, are less than the average of the previous nine years, by 3 6-9 and one lower than in 1865. Two years of the nine, however, 1863 and 1859, had fewer deaths than the present year.

Nov., 1866	Ages.	Novembers.										Avg. 9 yrs. Novs., 1857-1865.
		Oct., 1866,										
			1865	1864	1863	1862	1861	60Max.	59Min.	1858	1857	
3	Under 1	7 4	4	7 12	9	7 4	3 6	6 2-9				
1	1 to 5	1 0	2	1 6	3	8 3	7 6	4				
4	5 to 20	0 2	6	4 3	2	5 2	3 4	3 4-9				
9	20 to 45	9 7	12	6 9	11	9 11	12 14	10 1-9				
8	45 to 60	6 8	9	5 6	7	11 4	7 5	6 8-9				
11	60 and above	13 16	10	7 9	7	11 5	6 10	9				
36		36 37	43	30 45	39	51 29	38 45	39 6-9				

"Under 1 year old" the deaths were less than half of the nine years' average, 1858 had the same number, but no year had less.

At "1 to 5" years old, the mortality, 1, was only one-fourth of the average. Last year had not a single death in this group—1863 had the same as the present month, but all the rest had many more. At "5 to 20" the deaths, 4, were a few fractions above the average. 1865, 1861, 1859, had each only half the number of the present month but 1864, 1860 had both more. At "20 to 45" years of age, the mortality, 9, was below the average, though more than 1865 and 1863 had. At "45 to 50" the deaths, 8, were above the average, though the same in number as in 1865. At "60 and all ages above" the deaths, 11, were above the average though 5 less than 1865 had, of the eleven, five were above 70 years old the oldest being 81.

Nov., 1866	Classes of Disease	Novembers.										Avg. of 9 yrs, Novs. '57-'65.
		Octr., 1866.										
			1865	1864	1863	1862	1861	60 Max.	59 Min.	1858	1857	
0	1. Zymotic	0	3	1	3	8	3	4	4	6	4	4
11	2. Constitutional	9	9	11	6	7	4	5	6	6	24	4 6 4-9
20	3. Local	19	21	20	16	22	18	36	13	22	26	21 5-9
3	4. Developmental	6	4	6	2	5	8	2	3	3	1	4 3 8-9
2	5. Violent &c.	2	0	5	3	3	6	4	3	3	7	3 7-9
36		36	37	43	30	45	39	51	29	38	45	39 6-9

The 1st, or *Zymotic class of diseases* had not a single death, being the only November in the ten years so exempt. Moreover the previous month of October was similarly characterised.

The 2nd, or *Constitutional class of diseases*, was not much short of being double the average. In the previous 9 years, only 1864 had as high a number of deaths. The 11 deaths were:—1 from *dropsy*, 4 from *Cancer*, 6 from *Consumption*. Of the latter, 2 were born in Tasmania. In 1865 the deaths from *Consumption* were only 4, but the previous year had the same number as the present one.

The 3rd, or *Local class of diseases*, had a mortality slightly below the average as well as less than 1865 had. The 1st order, "*Diseases of the*

Brain and Nervous System," had 4 deaths, being 2 less than 1865 had. The 2nd order, *Diseases of the Heart and organs of circulation*, had 6 deaths, which is 2 more than 1865 had. The 3rd order, *Diseases of the Lungs and organs of respiration*, had 7 deaths, while 1865 had only 2. No doubt the low temperature, &c., of the present month will account for the difference. The 4th order, *Diseases of the Stomach and digestive system*, had but one death, while 1865 had 4. The 5th order *Diseases of the Urinary system*, had 2 deaths, being one less than 1865 had. In the remaining orders there were not any deaths, last year had one each in the 6th and 7th.

The 4th, or *Developmental class of diseases*, was some fractions below the average in its deaths, and 25 per cent. less than 1865 had. One was an infant which only survived its premature birth 13 days, the other 2 were old men, aged respectively 78 and 81 years.

The 5th, or *Violent and Accidental class of diseases*, had little more than half the average deaths, though 1865 had not any at all; one was a boy 11 years old who died from *the bite of a snake* on his arm, while bathing in a pond. He died in less than three hours not having any medical treatment. The other was a man of 46 thrown out of a cart, and the *spine fractured*.

Inquests were 3, two of them being the cases above alluded to, the third died suddenly from *Serous Apoplexy* while in a state of intoxication. In *Hospital* there were 11 deaths, being one more than in 1865. One was an admission from a country district. In the *Brickfields Male Invalid Asylum*, there were 4 deaths, respectively aged 61, 65, 77, 78, being 2 less than in 1865.

Of the 36 deaths, 22 were males, 14 females. Two died in the Glenorchy division of the Registration District, the rest in the city.

In the first week the deaths were 10; in the second, 7; in third, 10; in the fourth, 8; in the last two days, 1. For any two consecutive days the greatest number, 6, occurred on the 7th and 8th, when temperature fell rapidly from the maximum of the month, accompanied by a rapid rise in the barometer. Generally the deaths were more equally distributed throughout the month than is usual. Last year exhibited a marked contrast to the present, the deaths being first week, 14; second, 7; third, 10; fourth, 6; last two days none.

The registered *Births* were only 63 being—14 less than in November 1865.